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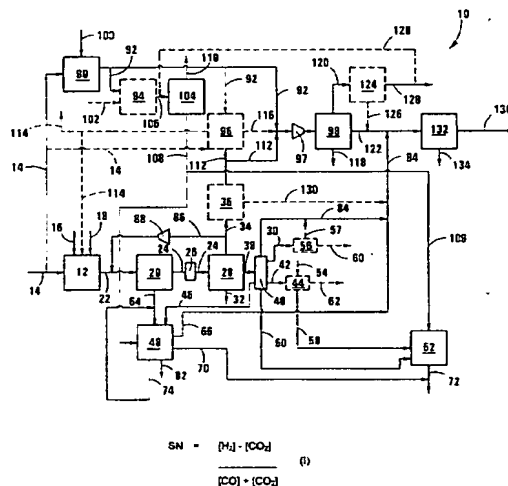
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(54) Title: CO-PRODUCTION OF HYDROCARBONS AND DIMETHYL ETHER



(57) Abstract: A process for co-producing hydrocarbons and dimethyl ether (DME) includes feeding a gaseous feedstock comprising hydrogen and carbon monoxide, into a threephase low temperature catalytic Fischer-Tropsch reaction stage, allowing the hydrogen and carbon monoxide partially to react catalytically in the Fischer-Tropsch reaction stage to form hydrocarbons, and obtaining a tail gas from the Fischer-Tropsch reaction stage which includes unreacted hydrogen and carbon monoxide and also carbon dioxide. The composition of at least a portion of the tail gas is adjusted to provide a DME synthesis feedstock with a syngas number (SN) between 1.8 and 2.2, where formula (I) and where  $[H_2]$ ,  $[CO]$  and  $[CO_2]$  respectively are the molar proportions of hydrogen, carbon monoxide and carbon dioxide in the DME synthesis feedstock. The DME synthesis feedstock is fed into a DME synthesis stage for conversion.

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